Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

MINERALOGY AND PETROGRAPHY.[1]

Anorthosites and Diabases from the Minnesota Shore of Lake Superior.—Along them iddle stretch of the Minnesota shore of Lake Superior occur several exposures of a light-colored, coarse rock, consisting essentially of a basic plagioclase feldspar which, according to Lawson,[2] is sometimes bytownite; but more frequently anorthite or labradorite. This plagioclase is usually fresh and quite vitreous in appearance. It contains, as inclusions, small bleb-like masses of augite, plates and rods of the same mineral arranged parallel to the clinopinacoid, liquid enclosures, dust particles and small grains of hematite. In addition to the plagioclase there is also often present in the rock a small number of triangular augite plates between the feldspars. This rock which the author calls an "anorthosite," is found in knobs and bosses, and as boulders in the overlying Keweenawan eruptives. The rock is evidently an eruptive which is much older than the volcanic flows constituting a large proportion of the Keweenawan beds.

A second article by the same author[3] treats of the coarse diabase in "gabbro" sheets interpolated between the sedimentary beds of the Animikie. These are thought by the writer to be laccolitic in origin, i. e., to have been intruded between the sedimentaries after these had been solidified, and some of them even later than the time of deposition of the younger Keweenawan series. This conclusion is reached after a careful study of the contacts between the eruptives and the sedimentaries, which has brought to view the existence of contact phenomena at both the upper and lower surfaces of the diabase. The sheets of eruptives have been named the "Logan sills" in honor of Sir Wm. Logan, who was one of the pioneer geologists in the Lake Superior region.

The Volcanic Rocks of the Andes.—In a review of Küch's volcanic rocks of the Andes, Iddings[5] asserts that the chemical relations of the rocks studied indicate clearly that they all belong to the same consanguinous group as do the Cordilleran rocks of Mexico and the United States, and their nature indicates that the magma producing the Andes types has not yet become as highly differentiated as that which yielded the corresponding volcanics in North America.

---

[1] Edited by Dr. W. S. Bayley, Colby University, Waterville, Me.
[2] Geol. and Nat. Hist. Survey of Minn. Bull. No. 8.
[3] Ib. p. 24.
[4] Reiss and Stubel: Reisen in Sud-Amerika. Geologische Studien in der Republik Colombia, I. Petrographie, 1. Die Vulkanischen Gesteine bearbeitet von Richard Kuch, Berlin, 1892.
[5] Jour. of Geology. Vol. 1, p. 164.

Basalts and Trachytes from Gough's Island.—Pirsson[6] has examined some pebbles gathered from the beach of Gough's Island in the South Atlantic. He finds two of them consisting of basalt, and the others of trachyte glass and tuff. The glass is a pitchy-black mass, filled with small pores and marked here and there by a phenocryst of plagioclase. In thin sections it appears as a brown unaltered isotropic substance containing magnetite, apatite, olivine and saidine phenocysts and microlites of the last-named mineral. An analysis of the rock gave:

SiO_2	TiO_2	Al_2O_3	Fe_2O_3	FeO	MnO	Mgo	CaO	Na_2O	K_2O	H_2O	Total
61.22	.42	18.01	1.32	4.51	tr.	.44	1.88	6.49	5.93	.46	=100.68

Density = 2.210. The rock is thus shown to be unquestionably a trachyte in spite of the fact that it contains occasional olivines. The mineral evidently crystallized in an early stage of the rock's history, as all its grains have been subjected to magmatic resorption.

The Origin of the Gneisses of Heidelberg.—In gneisses occurring in the region northwest of Heidelberg, Osann[7] finds lenticular masses of graphitic and apatite schists, and therefore concludes that the gneisses are of sedimentary origin. The rocks do not possess the true gneissic foliation, since their feldspar, quartz, etc., do not show a sequence in origin, nor do their micas exhibit the pressure phenomena usually observed in the micas of other gneisses. Their structure is described as the "hornfels structure" which is characteristic of contact products. The graphitic schists consist principally of quartz, muscovite, graphite and flecks like the "Knoten" of contact rocks, which are formed by the aggregation of plates of a green micaceous substance. The apatite schist is composed of 55% apatite, 43% quartz, and 2% of graphite, tourmaline and rutile. An analysis gave: CaO = 30.22; P_2O_5 = 22.86; F = 2.16; Insol. = 43.52.

Petrographical News.—Retgers[8] communicates in a few brief notes the results of his examination of rocks collected in southern

---

[6] Amer. Jour. Sci., XLV, 1893, p. 380.
[7] Mitth. gross. Bad. geol. Landesanst. Bd II, p. 372.
[8] Neues Jahrb. f. Min., etc., 1893, I, p. 39.

Borneo. Actinolite, smaragdite, and glaucophane schists are the most interesting foliated rocks studied. They contain, in addition to their characteristic components: epidote, garnet and orthoclase, most of which show the effects of torsion and pressure. A quartzite is remarkable in that it contains andalusite, sillimanite, rutile, zircon and tourmaline. The eruptives mentioned by the author as existing in this portion of the island are porphyrites, diorite, gabbro, peridotite, serpentine and a pyroxenite (augite-fels).

Analysis of cretaceous lithographic limestones from various localities in America and Germany give such discordant results that Volney[9] thinks it impossible to judge from analyses alone as to the commercial and technical value of such rocks. The organic matter in the stones contains nitrogen and traces of iodine. It is believed to be the residue of cretaceous fossils, and to be the cause of the peculiarly fine precipitation of the calcareous substance of good stones.

The term "poikilite" has already been referred to in this note as descriptive of a rock-structure produced by the inclusion of many differently orientated particles of some mineral irregularly distributed within large plates of another mineral. This structure has been described by so many petrographers as occurring in so many different rocks that Williams[10] suggests its general use and proposes "micropoicelitic" as the term descriptive of the structure when observed microscopically.

Some excellent examples of cone-in-cone structure in a concretion from the coal measures of Wolverhampton, England, are noted by Cole[11] as exhibiting clearly the crystalline structure of these bodies and their identity in mode of origin with spherulitic growths.

The rocks occurring at Cingolina in the Euganean Hills, described by Tchichatcheff[12] a few years ago, have been reinvestigated by Graeff and Brauns,[13] who find augite-syenite and olivine-diabase cut by dykes of hornblende and augite andesites. The plagioclase of the latter rock includes a large mass of the rock's groundmass which has crystallized largely as plagioclase with the same orientation as a thin zone of the same substance surrounding the corroded host.

New Minerals—*Sundtite.*—In some specimens of a silver ore from a mine at Oururo in Bolivia, Brögger[14] finds masses and crystals of a dark tetrahedrite-like mineral associated with stibnite and pyrite. The dark mineral is steel-gray, with a black streak. Its hardness is 3–4 and density 5.5. Measurements of the crystals, some of which are 1 cm. long, indicated an orthorhombic symmetry. Twenty-one forms were observed, and from these the axial ratio $a : b : c = .6771 : 1 : .4458$ was determined. An analysis gave :

---

[9] Journ. Amer. Chem. Soc., XIV, No. 10.
[10] Jour. of Geol., Vol. 1, p. 176.
[11] Miner. Magazine, X, p. 136.
[12] Neues Jahrb. f. Min., etc., 1884, II, p. 140.
[13] Ib., 1893, I, p 123.
[14] Zeits. F. Kryst, XXI, p. 193.

Cu	Ag	Fe	Sb	S		Total
1.49	11.81	6.58	45.03	35.89	=	100.80

which corresponds to the formula $(Ag_2 . Cu_2 . Fe) (SbS_3)_2$, or a salt of normal sulph-antimonic acid. Sundtite presents no analogies, either in composition or in its crystallographic characteristics, with other sulph-antimonates. Its nearest crystallographic relative is deschynite (RNb_2O_6). The new mineral is a commercially valuable ore of silver.

Melanostibian is another new mineral obtained by Igelström[15] from the celebrated manganese mine, Sjögrufvan, Grythyttan, Orebro, Sweden. It occurs as narrow veins in the dolomite, which is the bearer of all the ores of the mine. The mineral is in raven black, metallic-looking masses and tiny crystals, that are either tetragonal or orthorhombic. The streak of the mineral is cherry red, and its hardness 4. It is insoluble in dilute hydrochloric acid, but slowly dissolves in boiling acid. Its composition, corresponding to $6(Mn\ Fe)O\ Sb_2O_3$, was deduced from the following figures:

Sb_2O_3	FeO	MnO	CaO	MgO	H_2O		Total
37.50	27.30	29.62	1.97	1.03	1.06	=	98.48

Graphitite.—Upon treatment with nitric acid under certain conditions, the graphite from Ceylon, Norway and Canada yields an oxidation product that is different from the corresponding product obtained from the graphite of Fichtelgebirge, Siberia and Greenland. The materials of the two groups are therefore regarded by Luzi[16] as different, and as worthy of distinctive names. The mineral from the last-named localities is called graphitite.

American Minerals.—The *cookeite* of Paris and Hebron, Me., has been known for some time as a micaceous mineral closely related to the chlorites. In habit its plates are hexagonal, and are nearly always arranged in radial groups. These plates, according to Pen-

---

[15] Ib. p. 246.
[16] Ber. d. deutsch. chem. Ges., XXVI, p. 890.

field,[17] consist of an inner uniaxial hexagon surrounded by six segments extinguishing parallel to their edges and showing a biaxial interference figure. The mineral is monoclinic and is twinned like the clinochlor[18] from Texas, Pa. It is associated with quartz, lepidolite and tourmaline, and has probably been derived from the latter by alteration. An analysis of carefully selected material gave:

SiO_2	Al_2O_3	Fe_2O_3	CaO	K_2O	Na_2O	Li_2O	H_2O	F	Total	O =F
34.00	45.06	.45	.04	.14	.19	4.02	14.96	.46	=99.32	—.19=99.13

This corresponds to the formula Li $[Al(OH)_2]_3 (SiO_3)_2$. The density of cookeite is 2.675.

The results of an examination of *zunyite* from the Charter Oak mine, at Red Mountain, Orange Co., Colo., and of *xenotime* from Cheyenne Mountain, El Paso Co., in the same State, have recently been communicated by Penfield.[19] The zunyite occurrence is five miles north of the original occurrence of the mineral first described by Hillebrand. The mineral is in little tetrahedrons scattered through an altered porphyrite. An analysis of these gave:

SiO_2	Al_2O_3	Fe_2O_3	Cl	F	H_2O	P_2O_5	CaO	Na_2O	Total	O=Cl&F
24.1	157.20	.61	2.62	5.81	11.12	.64	.11	.48	=102.70	—3.03=99.67

corresponding to $[Al(Cl.F.OH)_2]_6 Al_2 (SiO_4)_3$. Zunyite is found also in the mine as a white pulverulent mass resembling kaolin, but which consists of tiny octahedral crystals. The xenotime was from the tysonite locality described by Hidden[20] in 1885. It was a single fresh crystal of a brown color, implanted on a gangue of quartz and feldspar. Its density was found to be 5.106, and its composition: $P_2O_5 = 32.11$; Yt. Er = 67.78; Ign. = .18.

In the crystalline dolomite of Canaan, Ct., Hobbs[21] has discovered a rose-colored *talc*, that is noticeable for its large percentage of calcium and aluminium. Its analysis yielded:

SiO_2	Al_2O_3	MgO	CaO	FeO	MnO	H_2O	Total
61.48	3.04	22.54	4.19	.77	tr.	5.54	= 100.56

The density of the mineral is 2.86. It is optically negative, and its axial angle 2 E is 15° 30′.

In a recent Bulletin of the United States Geological Survey, Melville[22] has given the results of analysis of several American minerals as follows: *Natrolite* (I) from Magnet Cave, Ark.; a light-colored *tourmaline* (II) from Nevada Co., Cal.; *spessartite* (III) from Llano Co., Texas, and *bismuthinite* from Sinola, Mexico. Figures follow:

---

[17] Amer. Jour. Sci., XLV, 1893, p. 393.

[18] Ib. XLIV, p. 201.

[19] Ib. XLV, 1893, p. 396.

[20] Ib. XXIX, p. 249.

	SiO_2	Al_2O_3	Fe_2O_3	FeO	MnO	CaO	MgO	K_2O	Na_2O	H_2O	F	B_2O_3
I	47.56	26.82		.20		.13	.09		15.40	9.63		
II	36.40	33.64	3.13			1.51	10.01	.12	2.49	3.53	.74	8.74
III	35.93	18.08		4.60	31.77	8.48	.69	.17		.36		

The spessartite contains also traces of TiO_2 and BaO.

Mineralogical News.—W. Ramsay[23] has discovered zonal growths of *epidote* substance in crystals of this mineral from the Sulzbachthal in Salzburg, Zöptan in Moravia, Arendal in Norway, Haddam, Conn., and from Traversella, Brosso and Ala in Piedmont. The different zones possess not only different colors, but they have also different extinction planes and diffent refractive indices, as do also different portions of the same zones.

Fragments and small crystals of carbon with all the physical properties of *carbonado* have been prepared by Moisson[24] upon dissolving carbon in iron and cooling the mass slowly under pressure.

Miscellaneous.—McMahon[25] has elaborated a systematic course in micro-chemical analysis based on the production of the sulphates and double sulphates of the elements. These salts are described as they appear on the object glass under the microscope, their habits are depicted and their constant peculiarities, if they possess any, are portrayed with some minuteness. The methods of analysis developed by the author will prove of great convenience to petrographers if they are found as practicable as they are declared to be.

The eighth volume of the mineral resources of the United States, edited by Dr. D. T. Day,[26] contains statistical data for the calendar year 1891. The total value of metallic products mined during this period amounts to over $181,000,000, and that of the non-metallic products over $241,000,000. The most notable article in the volume is an historical description of the past "twenty years of progress in the manufacture of iron and steel in the United States."

[21] Ib. XLV, 1893. p. 404.

[22] Bull. No. 90. U. S. Geol. Survey, p. 38.

[23] Neues. Jahrb. f. Min., etc., 1893, I, p. 111.

[24] Comptes Rendus, Feb. 6. Ref. in Nature, Feb. 16, 1893, p. 370.

[25] Miner. Magazine, X, p. 79.

[26] Mineral Resources of the U. S. Calendar year, 1891. Washington. Govt. Printing Office, 1893.